

ABSTRACT OF THE DISCLOSURE

An image sensor is proposed, which can output different amount of data according to different resolution modes. The image sensor employs a plurality of photo diodes to convert received optical signals into charges and uses a plurality of sets of transfer gates to move out the charges on the photo diodes. The image sensor uses a plurality of shift registers to receive the charges moved out from the transfer gates and to remove the charges according to two sets of control signals. A floating diffusion node is used to receive the charges on the shift registers for generating electrical signals. The image sensor uses a charge control unit to control whether the output charges from the shift registers are passed onto the floating diffusion node. Because the image sensor uses the charge control unit to control all, 1/2 or 1/4 parts of charges into the floating diffusion node, a scanner with the image sensor can obtain a high quality image when scanning in high resolution modes and run at a high speed when scanning in low resolution modes.